2007-10-14 Establish Reverse Protons

Monday, October 15, 2007
11:00 AM

Problem: AP1 trims not ramping. The bulk digital status, M:CSF23 showed Ok, but all of the regulators showed an "external permit" trip. Locally, the "external permit" LEDs were not lit on the regulators. On the bulk controller, control card #2 had LEDs missing for DLY1-DLY6.
Solution: 480 was breakered off. The bulk supply shows normal even when there is no 480V present.

Problem: The extraction shutter would not close. The motor power indicator on the A:ESHUT digital status showed it was off, but the motor power A:ESHTMT was on.
Solution: Power cycling the controller fixed the problem.

Problem: Accumulator BPMs were not functioning. All houses had errors, and the AP10 house had GPIB error. Cycling each house via the A:BxPOWR (where x= 1,2,3,4,5 or 6) would clear all but the GPIB error; however, when a "start data collection" was initiated from P51, all houses would go in error. Spent lots of time looking at parameters on P57, BPM nodes from D31 (APABx0. with x=1,2,3,4,5 or 6), looking at hardware, and Keith parsing through the P51 code.
Solution: GPIB to Ethernet boxes inside the racks had to be power cycled at each house.

Problem: Java program for Pbar Aperture scans no longer works.
Solution: Paul Derwent found that computer security changes have resulted in the application no longer working across the firewall. The program was written with some components outside of the firewall so we can run the app from our offices. Now it no longer works, even from the MCR!!! Paul is investigating!

Establishing Reverse Protons to the Accumulator:

a. Sequencer Mode 5 aggregates used:
    i. Rev Prot to Debuncher
b. Sequencer Mode 2 aggregates used:
    i. Move beam with ARF3
    ii. Acc Hor aperture scan
    iii. Acc Ver aperture scan
c. Ran with a dedicated $2D in the cycle, once per minute, so we did not do one shots.
d. Frequencies used for measurements
    i. Injection = 628767Hz
    ii. Central = 628840 Hz
    iii. Core = 628898 Hz
e. Betas used for Reverse Protons Accumulator admittance measurements
    i. Bx = 20.31m
    ii. By=24.77m
f. SA setup for Accumulator aperture scans
    i. Need SA#5 (old SA)
    ii. P41 file 34
    iii. Accumulator Longitudinal
    iv. CATV Pbar 22
    v. SA13VO
g. ARF3 states used. A:BUNCH =
    i. 10 = bunch beam, ramp frequency, unbunch beam (admittance measurements)
    ii. 11 = bunch beam, ramp frequency, leave beam bunched (BPM orbits)
    iii. 12 =Don't bunch beam, ramp frequency, leave beam bunched.

iii. 12 =Don't bunch beam, ramp frequency, leave beam bunched.
iv. 13 = Don't bunch beam, ramp frequency, unbunch beam

h. Momentum scrapes
   i. From left,
      1) A:LJ314F
      2) Counter-clockwise moves into the beam.
      3) Two turns of the knob is approximately one box on the CATV display
   ii. From right
      1) A:RJ314F

i. BLM setup for Accumulator aperture scans to trigger on a $0F (15 Hz).
   i. D:LMx0CL
   ii. D:LMx0ST

j. Established beam. First pulse of reverse protons circulated in the Accumulator. Here is beam after the P150 tune-up.

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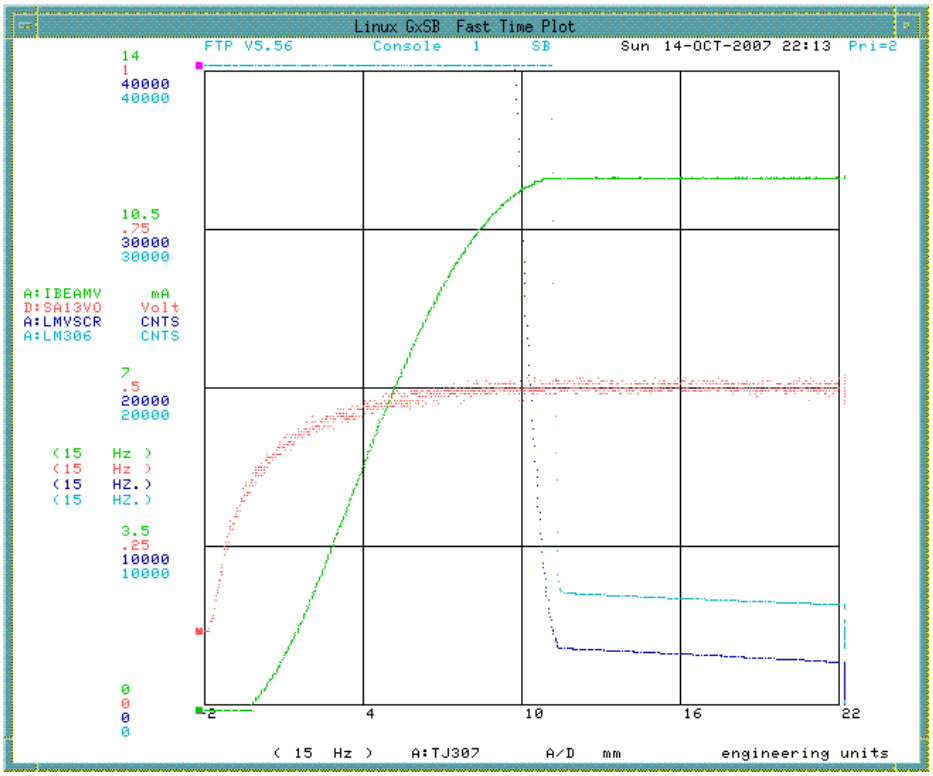
Below are Accumulator reverse proton aperture scans on the central orbit.



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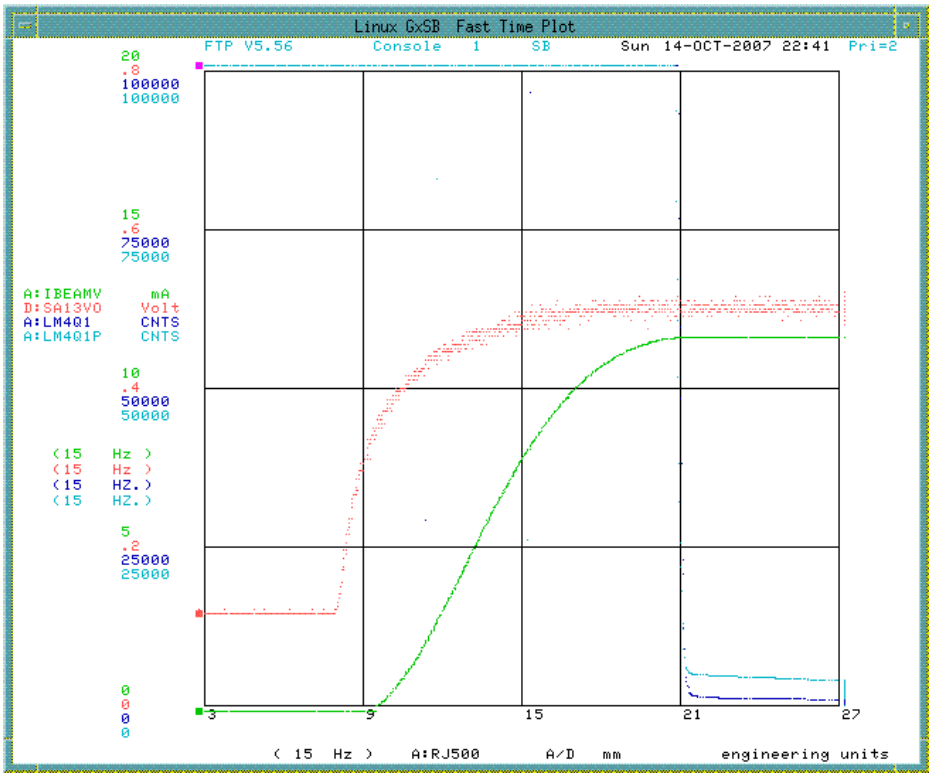

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i.